

GUARDSMEN OF THE COAST



JOHN J. FLOHERTY





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By JOHN J. FLOHERTY



DOUBLEDAY, DORAN & COMPANY, INC.

GARDEN CITY MCMXXXV NEW YORK

Books by
JOHN J. FLOHERTY

FIRE FIGHTERS!
'BOARD THE AIRLINER
GUARDSMEN OF THE COAST



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PROVIDENCE LITHOGRAPH COMPANY
PROVIDENCE, RHODE ISLAND
FIRST EDITION

TO THE OFFICERS AND MEN OF THE UNITED STATES COAST GUARD
WHO HAVE GIVEN THEIR LIVES THAT OTHERS MIGHT LIVE
THIS BOOK IS DEDICATED

BEFORE going further I wish to express my gratitude to the Coast Guard Service for the unstinted aid and whole-hearted hospitality it extended to me while I was preparing this book.

I have sailed with them on their sea-going cutters in storm and in calm. I have broken bread with them in their lonely shore stations close to the pounding surf. I have watched them afloat and ashore go about their appointed duties, knowing that from the captain to the cabin boy, every man of them was alert and ready for the call that would ere long come from the sea—the call of distress. To the following officers particularly I owe much for their never failing help, courtesy, and inspiration!

Captain Benjamin Maurice Chiswell, Captain James Freeman Hottel, Captain Thomas Marcus Molloy, Captain William Henry Shea, Commander Gordon Whiting MacLane, Commander Earl Griffith Rose, Lieutenant Commander Frank Terry Kenner, Lieutenant Eugene Topping Osborn.

THE AUTHOR

GUARDSMEN OF THE COAST



ON LIFE SAVING DUTY

A NORTHEASTERLY gale is driving straight down from the polar zone, piling surf up on the beach with continuous rolling thunder. What a night of terror for ships and men at sea!

A lone man patrols the wild stretches of that barren beach. He is clothed in oilskins and sou'wester, so frozen with sleet and spray that they clank and crackle like armor. He is struggling head downward against the driving wind, fighting step by step, splashing through water up to his hips, leaping to a foothold to escape the undertow or worse, those overwhelming rushes of surf through fresh-cut breaks in the dunes. Sometimes he straightens himself and stands quite still, trying to pierce the darkness, in which a ship may be in distress.

He is the surfman, lowest in rank of the sea police—the Coast Guard. There are six long weary miles in the length of his

patrol. Three to go and three to return. He carries a light, a Coston flare for emergency, and a time detector, or patrol clock, hung over his shoulder by a leather strap. When he reaches the end of his patrol and the frontier of the next Coast Guard station, he opens the key post, a box containing a telephone and key. He inserts the key in his time detector and with a turn marks a dial card which his superior officer inspects later. Thus he is a unit in the long unbroken line of patrols stretching along our most dangerous coasts. His station is a link in the chain of life-saving stations extending around thirteen districts or areas from Canada to Cape Fear, along the shores of the Great Lakes, the Gulf Coast, the Pacific Coast and far north among the sealing grounds of the Aleutian Islands.

The personnel of the Coast Guard shore force is recruited from men between the ages of eighteen and twenty-five. Application for enlistment is made at the district station. If a man's character is good, his education fair, if he has committed no crime, has had no record of mental deficiency, has no vicious habits, no addiction to drugs or alcohol, he is taken on as a substitute surfman for a period of three years. After that he is sworn into the regular enlisted Coast Guard. From the rank of surfman he may develop into a petty officer, a warrant officer, or an officer in



charge of one of the many stations along the coasts.

The surfman begins his course of training. He stands his watch as lookout in the tower, high above the station, swinging his marine glasses slowly round to take in every detail of sea and shore to make his report. As a member of the boat crew, he is trained to understand the ways of a boat in sea and surf and wind. He is a practised oarsman, drilled monotonously week after week, year after year. He is a strong swimmer. He must be able to dive straight down to an underwater target seven feet deep and bring up a ten-pound object. He can shoot straight with rifle or pistol. He is an adept at first aid, in resuscitating the apparently drowned, or in easing frostbite, burns, or any other injury characteristic of shipwreck. In short, his life, like that of all his fellow guardsmen afloat or ashore, is one of strict training and readiness for heroic service.

In the old days—from the fifteenth to the twentieth centuries—the masters of all sailing craft regarded our shores with dread. From the Maine coast to Cape Hatteras lay long lines of wreckage. During the nineteenth century, there were 2,500 shipwrecks and 10,000 lives lost on the Cape Cod shoals alone.

Before that time, however, the natives of New England had been roused by the terrible toll of men and ships to the founding of

LOOKOUT TOWER AT SHORE STATION



A TYPICAL COAST GUARD STATION

the Massachusetts Humane Society in 1785. It was made up mostly of volunteer fishermen. At first it provided shelters at Hull and Provincetown where the shipwrecked could escape freezing and starvation; then it added whale boats and crude life-saving apparatus; and then, later on, regular crews of professional guardsmen at all dangerous points.

The federal government began to help in 1871 with stations of its own, first along the perilous approaches to New York, such as Fire Island and Sandy Hook, then up and down the Atlantic seaboard and around the gale-swept shores of the Great Lakes. The most treacherous points along these coasts were originally selected as sites for stations.

Today we have 270 staunch white-painted Coast Guard stations where four-hour watches are stood, just as aboard ship. Each has its observation tower, boathouse and living quarters, warm, well-lighted, and spotlessly clean. Each has its stalwart,

finely-trained crews and the latest approved lifeboats and life-saving apparatus.

ROW OF SURFBOATS
LINED UP ON BEACH



Let us follow our surfman as he forces his way, step by step, along the wind-swept beach. His frozen oilskins clank at his heels as he swings his light through the gloom.

He stops short, sensing something wrong as he looks over the water.

Is there a ship out yonder on the reef, or is it a specter of spume and wind? A long thin trail of light winds upward, far upward into the darkness, to burst at length into a brilliant red star shower. Again and again the rockets climb up into the darkness from what appears to be a schooner aground. Our surfman, in answer to this signal of distress, pulls from his belt the Coston flare. It resembles the half of a sawed-off wooden rolling pin. He grasps the handle and jerks at a piece of tape which is fastened across the sealed top. Instantly the flare, through the friction of the tape, is ignited, and he holds it high and away from his face—a dazzling red glow which neither rain nor wind nor flying spray can smother. To the crew of the stranded ship it gleams like a star of hope, for it means that a Coast Guard Station stands by, ready with men and boats and gear to begin the work of rescue.


The lookout on watch in the station tower has observed the rockets and the surfman's answering flare. He reports below to the communications room and the officer, or skipper, as he is called.



Already the telephone in the communications room is sending the news to adjacent stations and to the district commander's headquarters in a near-by port, where it is promptly relayed to Division Headquarters in the nearest coast city, and from there broadcast by radio to all Coast Guard vessels in the vicinity of the wreck.

"Boat on the bar!" or "Ship ashore!" resounds through the building.

Instantly the Coast Guard Station buzzes with activity! Everywhere men are pulling on hip boots, oilskins, life jackets, and sou'westers.



Almost immediately the skipper is rushing with his crew behind him to throw open the wide doors of the boat house, and there we see the surfboat, 25 feet long, 6 to 8 feet wide, built of cedar, beautiful in line yet sturdy enough to withstand the buffeting of sea or sand or wind. She is cradled on a four-wheeled carriage or truck. Along her edges or gunwales run heavy sponsons, which are hollow tubings, highly buoyant so as to lessen the dangers of upsetting. Below these are life lines strung with egg-like floats and festooned in semicircles every few feet along the outside of the hull, so that a person in the water may hang on for his life. Also, just below the water line run strips of wood with elongated openings known as hand holds. Should the boat capsize, the crew find these necessary, for holding on and righting the boat more speedily.

The surfboat is equipped with every device necessary for saving life at sea. There are oars for six men, life belts, ropes, lamps, and flares. And there, pointing astern, is a huge 16-foot

HAULING SURFBOAT TO THE BEACH

oar, in a metal bracket attached to the stern. This is the steering oar, one of the most primitive devices known to men of the sea, but one of the safest and surest. It takes the place of the rudder, which cannot be used in launching from sand, since it runs lower than the keel of the boat, or in steering through turbulent surf where frequently the stern is out of water.

Down in the bottom of the boat are coils of rope and a binnacle or compass. Also a drag, or drogue, which is a cone-shaped canvas water parachute with a metal ring two feet in diameter at the circular open end, to which is made fast a long rope. In backing the boat in toward shore through wild surf, this drogue is thrown overboard, where it submerges and drags astern. It keeps the boat head into the wind and sea, and there is less chance of her broaching to, or veering suddenly, which usually means upset and disaster.

There, too, is a 5- or 10-gallon cask of drinking water called the water breaker, set on a cradle in the bottom; a mast, spars, and sail folded in the conventional manner in the event of having to sail back home.

Alongside the surfboat stands another important piece of apparatus—the cart—loaded down with life-saving equipment. Aside from the breeches buoy, perhaps the most striking feature



is a huge drum or reel wound with heavy 3-inch rope called the hawser. Another smaller reel is wound with a lighter rope called the whip. Then there is a small bronze cannon known as the Lyle Gun, capable of hurling a projectile 700 yards. This projectile carries the shot line from the shore to the distressed vessel.

The shot line is also part of the cart's equipment, as are axes, shovels, pickaxes, and several types of lights and flares. Even a speaking trumpet hangs in its place. It is used to carry the Coast Guardsmen's voice through the roar of the surf and wind.

Still one more piece of equipment takes our eye, and that is the life car, a sort of last resort when all other means of rescue fail. It consists of a small broad steel boat completely decked over save for a small hatch or opening just large enough for a single person to enter at a time. As many as seven persons can squeeze themselves into the life car. Of course, this makes it rather crowded, but so much the better. The more crowded it is the less the occupants are thrown around. What little ventilation there is, is secured through a circular area about as large as a dinner plate on the deck. This area is perforated somewhat like a nutmeg grater, rough side upward. It is a curious fact that very little, if any, water comes through these perforations in that each perforation is rather like an inverted funnel. While no great amount of air gets in, still, there is enough for the short passage between the ship and the shore. When the water-tight cover is placed over the hatch and fastened on the inside, this curious sealed-up craft is pulled ashore as rapidly as possible, not above the waves like the breeches buoy, nor on the waves like the surfboat, but through







and under the waves somewhat like a submarine.

Meanwhile the skipper and his crew are dragging the surf-boat out of the boat house and across the clogging wet sands. By the eerie light of dancing lanterns and streaming torches we see them go, each man with a rope sling thrown across his shoulders like a harness, pulling and straining with almost superhuman effort toward the scene of the shipwreck. Nothing must stop them now.

"We Must Save Life." That is the creed of all coast guardsmen.

Now the beach is bright with gaslights burning from acetylene tanks and torches set at intervals on the trucks and in the sand. A powerful searchlight is turned on the wreck. As the men take up their positions on the beach, there is no confusion; each man, perfectly trained for his part, stands at attention. The boat wagon, at the skipper's command, is run down into the surf. The king pin, on which the front wheels pivot, is removed, and the front wheels are taken away. Instantly, with the lowering of its forepart, the truck becomes a slanting skidway down which the boat slides into shallow water.

First there comes a pause, until the wash of a huge breaker rolls high up on the beach; then there's a run with all hands grasp-





SURFBOAT IN BREAKERS

ing the gunwales. Now the boat is afloat, the men running in water up to their hips. Suddenly a mighty leap, and with the skill of long practice they are all aboard, each at his oar, with the craft still running forward.

A series of quick, short, choppy fisherman's strokes—and they are shooting straight into the next roller, each oar biting wild water. They reach it before it breaks and becomes a curling,

crested wave called a comber. The boat disappears from view in the trough of the sea, then reappears with her bow pointing skyward but shooting straight for the next roller, which comes on, vicious and snarling. Up she goes and over, dropping on the other side with a terrific splash. It is all a matter of teamwork and timing—with the bowman poised free-handed to watch for dangers ahead, and with the skipper himself as the pivot man, standing in the stern at the steering oar, heading her straight into the wind.

By now the gloom has lifted a bit. The doomed ship lies ahead, caught on a sand bar. Already she is listing heavily, and her crew are crowded on deck, almost at the end of their endurance.

The skipper must approach the wreck down its lee, or on its

A TYPICAL SURFBOAT



sheltered side, for he knows that on the side away from the wind there is usually an invisible track of calmer water.

But a new crisis arises: a synchronous sea—that is, one in which several waves have combined to make a mammoth one—comes leaping at them. As it meets the rip tide off the bar, roaring and hissing at the little group of oarsmen, the boat suddenly “pitch-poles”—rises up at the bow, performs a half loop, and comes down keel up.

“Stick to the boat!” roars the skipper.

And this they do, as with shout and heave they grasp the hand holds of their capsized craft and right her again. In a few minutes every man is back in his place in the boat. True, it is half full of water, but the surfboat is self-bailing. It has two bottoms, as it were, the lower one in contact with the sea, the upper one above its level. Drain pipes called scuppers run from the upper bottom or floor through the lower bottom so that the water in the boat runs out in a short time.

Giant seas hiss and snarl. Try as he will the skipper cannot get a line aboard the doomed vessel—though he has tried the heaving stick, which is really a ball of lead on a bamboo handle, and which is attached to a line that may be thrown a long distance by hand. To take the crew off the wreck in the surfboat isn't



humanly possible if they cannot get to the ship, so they give it up, and heaving the drogue or water parachute overboard, they point the boat's stern to the beach and back in stern first.

The surfmen on the beach are already beginning operations with the "B.B." or breeches buoy, by setting the Lyle gun in position. This is carefully aimed over the wreck, so that the shot line which is attached to the projectile may fall on the vessel. This

line must travel with perfect smoothness without kink or snarl, therefore it is wound or faked on a curious board on which wooden pins stand around the edge like a picket fence. When the line is faked on these pins a box is placed over it. Before it is used, however, the box is turned upside down, the board and its pins are withdrawn, and there is the line nesting in the box in a beautiful pattern not unlike a diamond-pane window.

By this time the crotch, which is made of stout wooden poles in the form of a giant capital A, is erected on the beach, and some

BREECHES BUOY IN USE
MAKING TAUT THE BREECHES BUOY HAWSER





yards behind it is buried the sand anchor—two crossed timbers, to which is made fast the tackle which pulls the hawser taut over the top of the crotch, thus forming a sort of tight rope over which the breeches buoy travels between the beach and the wreck. The breeches buoy is nothing more than a life ring to which a pair of heavy canvas breeches is strongly attached. The victims of the wreck, each in turn, insert their legs in the breeches and hold on to the ropes by which it is suspended. From the pulley on the hawser they are drawn ashore by means of a thin strong line called the whip.

Now the officer, assisted by two surfmen, fires the Lyle gun. The shot lands true! We know this, for in the faint light of a gray dawn we see two or three survivors struggle to their feet and haul the line in slowly. By means of this line they pull out the hawser to which is attached the tally board, a piece of wood about the size of a shingle on which is printed in English and French:

"Make tail block fast to lower mast well up. If mast gives, then best place you find. See that rope in block runs free. Signal ashore."



The surfmen on the shore end of the hawser tighten it firmly with a powerful tackle and send the breeches buoy along its length. No women or children are aboard the ship, so the sailors come first.



Look! Out there on the shelving deck a young sailor has grasped the breeches buoy and is thrusting his legs through it. A comber crashes against the hull beneath him. Icy spray leaps high in air, blotting out ship and boy. Is he lost, poor fellow? No, here he comes, gliding inshore, his long legs dangling grotesquely from the breeches buoy, his frostbitten hands clinging to the ropes! Watch him crashing through wave after wave! Watch the guardsmen lift him free of the buoy and rush him over to the bonfire, where he lies wrapped in blankets, half conscious but smiling!

Look again! The buoy is making another journey. This time it carries a very old man with a frosty white beard! He seems far spent, but his wrinkled face is full of gratitude as he is



hauled ashore. He seems to be cuddling something inside his jacket. Treasure, perhaps? It's the ship's cat, spitting and clawing and wondering what it is all about.

One by one the victims are drawn ashore—twelve in all, including the captain, who is the last to leave the vessel. They hug the fire for awhile; then they are led or carried to the shelter of the Coast Guard Station—to dry clothing and warm blankets, to steaming hot coffee and the first real food they've tasted since the storm began.

Life at a Coast Guard Station has its stern routine of duties: scrubbing floors, polishing apparatus, and painting—always painting with white paint the station itself, inside and out, and all outbuildings, watchtowers, flagpoles, and boats. It has boat drills, fire drills, and target practice several times each week. Oarsmanship is play to the well-trained guardsman, and beyond both, surfmanship—that rare, indescribable art which becomes instinct through training and tradition.

A knowledge of signals is necessary to the guardsman: sound signals for fog given by whistle, horn, and bell; flashing light signals in dot-and-dash code, and all storm signals, with flags by day and lanterns by night.

The shore forces of the Coast Guard, especially those stationed

COAST GUARD STATION AT FIRE ISLAND, NEW YORK

on barren beaches remote from civilization, are devoting their lives to humanitarian service. They are the friends of mariners and fisherfolk who live alongshore. They are their guides, and helpers in distress. In their stations comfort and food are always at the disposal of the needy. Out in the reaches of sea and beach where the cry of the gull and the roar of the surf are the only sounds they hear, they have developed into a rare brotherhood untouched by the world. They are strong men, gruff, hearty, rough and ready; yet they are always quick to help others.





“SEMPER PARATUS”—ON LAND AND SEA

THE Coast Guard has two branches: the life-saving service ashore, and the cutter service, which operates its ships along the coast or out at sea. These two services, combined by an act of Congress in 1915, necessarily coöperate with and supplement each other.

The motto of the Coast Guard is "Semper Paratus"—Always Ready.

The cutter branch is an organized armed force of the sea police. It was originated and founded in 1790 by Alexander Hamilton, as a revenue cutter service, to fill the need for coast patrol, to enforce customs laws, to rescue lives from ships in distress, and to protect the seacoast. With the steady growth of the nation, additional duties have been imposed upon it to meet the ever increasing demands of the maritime department of government.

Even in times of peace, the Coast Guard maintains military discipline, drill, and training, to keep the personnel fit for the duty of operating as part of the navy in case of war. Consequently the Coast Guard, since the year of its organization, has served with distinction as part of the naval forces in every war in which the United States has been engaged, including its service in the late World War, convoying troopships, fighting enemy submarines, and performing patrol duty in the war zone and at home.

The Coast Guard's specific duty is to enforce federal law upon the navigable waters of the United States and its insular possessions, and upon the high seas wherever the jurisdiction of the United States extends. This includes the prevention of smuggling and the enforcement of all maritime laws relative to customs, navi-





gation, anchorage, oil pollution, immigration or quarantine.

It provides safety and regulates water traffic during regattas or marine parades. It suppresses mutinies on merchant vessels. It protects bird and game reservations from illegal hunters, called poachers, or from oil-polluted waters. Also it protects the sponge fisheries from illegal fishers in the Gulf area.

The seal and otter fisheries in the Bering Sea off the coast of Alaska are also under the guardianship of the Coast Guard. Russia, the United States, Japan, Great Britain, and Canada have signed treaties prohibiting pelagic and other illegal sealing. It is the duty of the Coast Guard to prevent unscrupulous sealers from the pelagic sealing, or the killing of the seals in the water en route to the rookeries. They must also watch that the sealers do not exceed their limit and that their methods of killing are legal. Among the seal rookeries on the Pribiloff Islands, these treaty laws are con-



A SEAL ROOKERY

THE CUTTER "NORTHLAND"
IN THE ARCTIC ICE



stantly enforced. If a ship is caught in the act of law breaking, its cargo is seized and its captain and crew are placed under arrest.

Now a word in detail about a few of the above duties.

In enforcing the law on navigation, the Coast Guard sees to it that all cargo and passenger-carrying vessels and motorboats are equipped with the required lights, the proper number of life preservers, approved signaling devices, and copies of the printed rules.

In large ports, the enforcement of anchorage laws is under the direction of a Coast Guard officer who is known as the captain of the port. He is in command of the harbor patrol boats. He issues anchorage permits which confine anchored vessels to specified areas for a specified time. He also issues permits for the loading and unloading of explosives within certain periods and areas.

In preventing oil pollution, the Coast Guard sees that oil-burning or oil-carrying vessels, which must of necessity blow out the "sludge" or solid matter which settles in their tanks, do so at some fifty miles from shore. In this way oily refuse is disposed of without the danger of its being blown ashore and polluting beaches and marshlands where wild fowl feed.

In the Alaskan patrol one or several officers are empowered as commissioners. They administer the law in certain criminal cases. Other officers on this patrol are empowered as federal

CUTTER "THETIS" GUARDING THE ITALIAN AIRPLANE
FLEET DURING ITS VISIT TO AMERICA



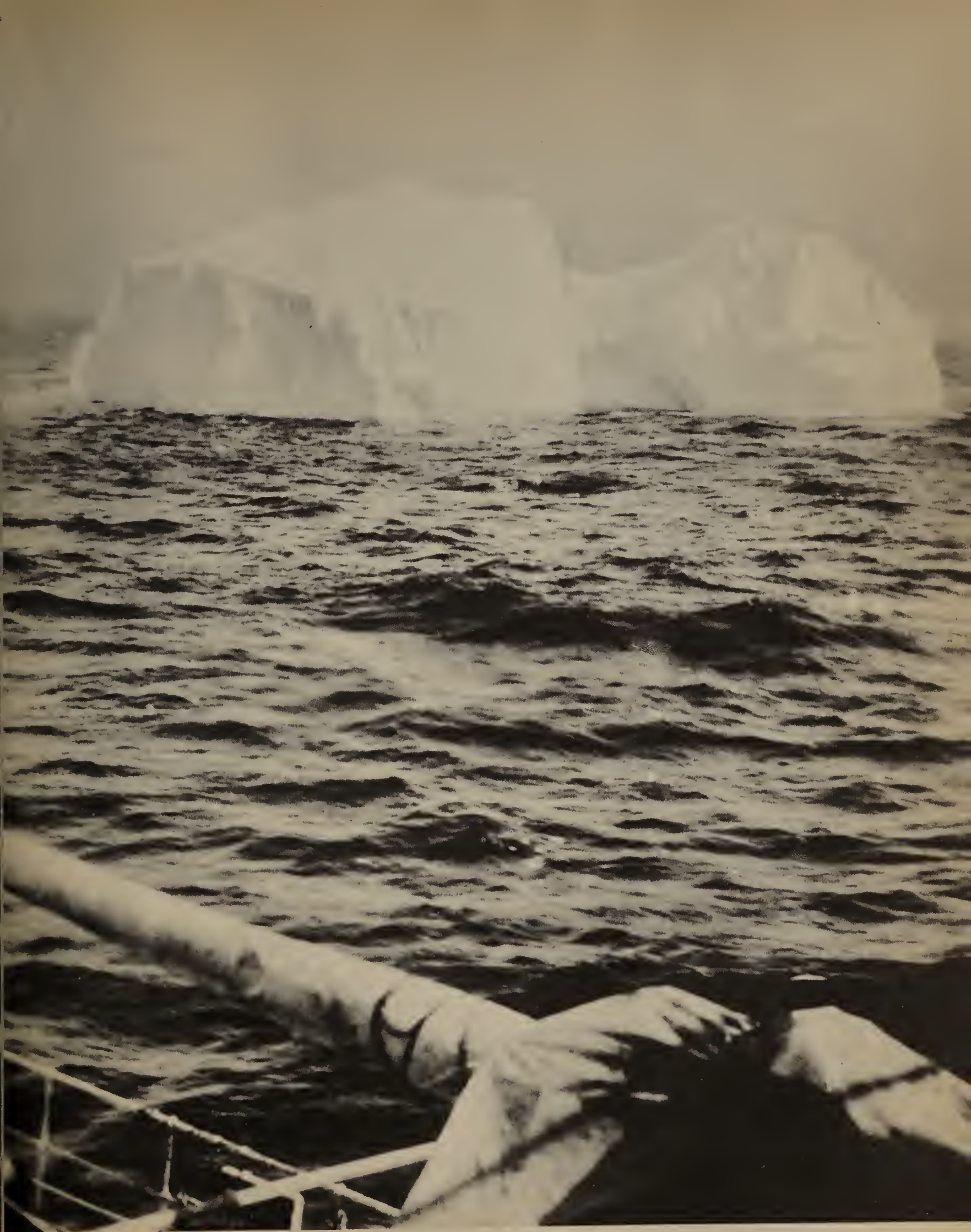
marshals. In addition to these duties and the guarding of the seal fisheries, the Coast Guard ships, such as the historic cutter *Bear* which for many years patrolled Alaskan waters, carry medical aid, mail, and often food to isolated icebound communities. Often these boats are the only contact many communities have with the outside world.

Coast Guard ships also patrol the high seas for icebergs and

derelicts, carry the United States mails to isolated stations, to lighthouses and lightships, and extend medical and surgical aid to victims of accident or illness at sea.

The ice patrol is especially important to safe navigation. Icebergs and ice floes, some of them measuring miles in extent, drift down from the Arctic into the shipping lanes of transatlantic liners. They appear in greatest numbers during April, May, and June and, gradually melting in warmer waters, disappear altogether about four hundred miles south of Newfoundland. All these areas are patrolled by boats sent out by order of headquarters and provided with a base for supplies at Halifax. True, they cannot entirely destroy the icebergs, even with dynamite, but they chart and report each one—its size and formation—its direction and speed.

Since the Coast Guard assumed charge of the International Ice Patrol of the North Atlantic by international agreement—after the sinking of the *Titanic* in 1912—not one single life has been lost as a result of collision with icebergs or ice fields. Coast Guard ships on ice patrol virtually regulate ocean traffic in those treacherous areas. As many as 38 vessels have been guided clear of icebergs in a single day, and during a single month 376 icebergs have been sighted within the path of navigation. Any ship can radio



"STANDING BY" AN ICEBERG

the ice patrol and receive full information on ice in the area. Also the ice patrol broadcasts announcements as to location and particulars of ice areas encountered within the past twenty-four hours.

There is still another Coast Guard service to aid icebound communities, by breaking out harbors and opening channels for navigation. If a vessel is icebound the Coast Guard is sent to break it out. In the winter two ice breakers in the Hudson River keep the channels open as far north as Albany. From Maine to New York other ice breakers are on duty. The Great Lakes section keeps a continual service in winter. Three sturdy ice breakers are kept in Alaska the year round.

Year after year, from the polar seas to the Gulf of Mexico, the Coast Guard service has made itself felt, not only as a stern agency in the enforcement of the law, but as a means for timely aid in trouble. It has been named the "Navy of Mercy." If we look up the records of the past year we find the number of lives saved was 5,597; the number of persons assisted and cared for, 36,013, and the value of vessels assisted, more than \$47,000,000.

The headquarters of the Coast Guard is located in Washington, and the ranking officer is the commandant, selected by the President. Commissioned officers of the cutter service have the same ranks and titles and receive the same pay as those in the navy.

COAST GUARD CUTTER TOWING BARGE
THROUGH THE ICE ON THE HUDSON RIVER





The personnel of the cutter service consists of 464 commissioned officers, 129 cadets, 84 chief warrant officers, 709 warrant officers, and 9,587 enlisted men.

The Coast Guard Academy for the training of officers is situated at New London, Connecticut. Here, as at West Point and

Annapolis, cadets are appointed after competitive examinations throughout the country and undergo a four-year course of training to become commissioned officers.

The group of buildings forming the academy is built on a beautiful slope of countryside overlooking the Thames River at New London, Connecticut. It is one of the finest groups of educational buildings in the country—modern in every detail, with classrooms, laboratories, and workshops completely equipped. On the broad lawn in front of the main entrance to the administration building stands a flagstaff—the mast of the fine old revenue cutter *Hamilton*

Entrance to the academy is no easy matter. Out of 1,000 applicants each year, about 51 are chosen, which makes an average of one in ten that pass the examinations, written and physical, that are necessary for admission.

The cadets pursue a four-year course, during which they are paid \$780 a year with an additional \$235 as a rations allowance. They study French, English, chemistry, physics, electrical engineering, radio, mathematics through calculus, naval construction navigation, ordnance and ballistics, seamanship, and surveying. They have, also, a thorough physical training in athletics and games to increase their readiness for service.

The academic year consists of 1 sea term and 2 study terms. The sea term is spent on a three-months' practice cruise, visiting such foreign ports as Gibraltar, Alexandria, Athens, Stamboul, Marseilles, and the Canary Islands, or such southern ports as San Juan, Rio de Janeiro, Montevideo, Buenos Aires, Bahia, and Trinidad.

The government, in its pride for the Coast Guard Service, spares no expense to make the academy an ideal institution for, as someone has put it, "the molding of young men into educated gentlemen with healthy minds in healthy bodies and the ability to discipline and command as officers of the fleet."

Today Coast Guard ships are stationed at all the chief ports of the United States: in the Philippines, the Virgin Islands, Hawaii, Porto Rico, and the Aleutian Islands off Alaska.

The floating equipment of the cutter service consists of 37 cruising cutters, 24 harbor craft, 8 special service craft, nine 165-foot patrol boats, 109 patrol boats from 125 feet to 75 feet in length, 75 picket boats, and 24 miscellaneous boats. This does not include the lifeboat equipment attached to Coast Guard stations and vessels.

SELF-BAILING, SELF-RIGHTING
POWER BOAT

A SEVENTY-FIVE-FOOTER



INTO ACTION ABOARD SHIP

COME, let us go aboard the cutter, for here we can get a clear understanding of the sea forces in action. Up the gangplank—until we stand on her deck. Every last detail aboard is orderly, immaculate. The ship is a symphony in gray, white, and buff. The decks are spotless.

Everywhere there is activity. Men in smart uniforms—dark blue in winter, white in summer—are busily engaged, or standing by, alert and silent. What a fine upstanding group of young Americans, bronzed by the sun, rain, and the dash of the sea! Some are beginners and some are seasoned veterans who have fought the sea for decades on errands of mercy or law enforcement.

Let us look at the broad afterdeck. Mounted in the center is a huge five-inch gun; on either side, smaller guns. The five-inch gun is one which fires a shell five inches in diameter, the barrel of the gun being nearly twenty feet in length. What glittering,

complicated masses of polished steel, brilliant brass and black enamel these guns are, with their gears, wheels,

HAWSER COILED ON BITTS

COAST GUARD CUTTER "CHAMPLAIN"





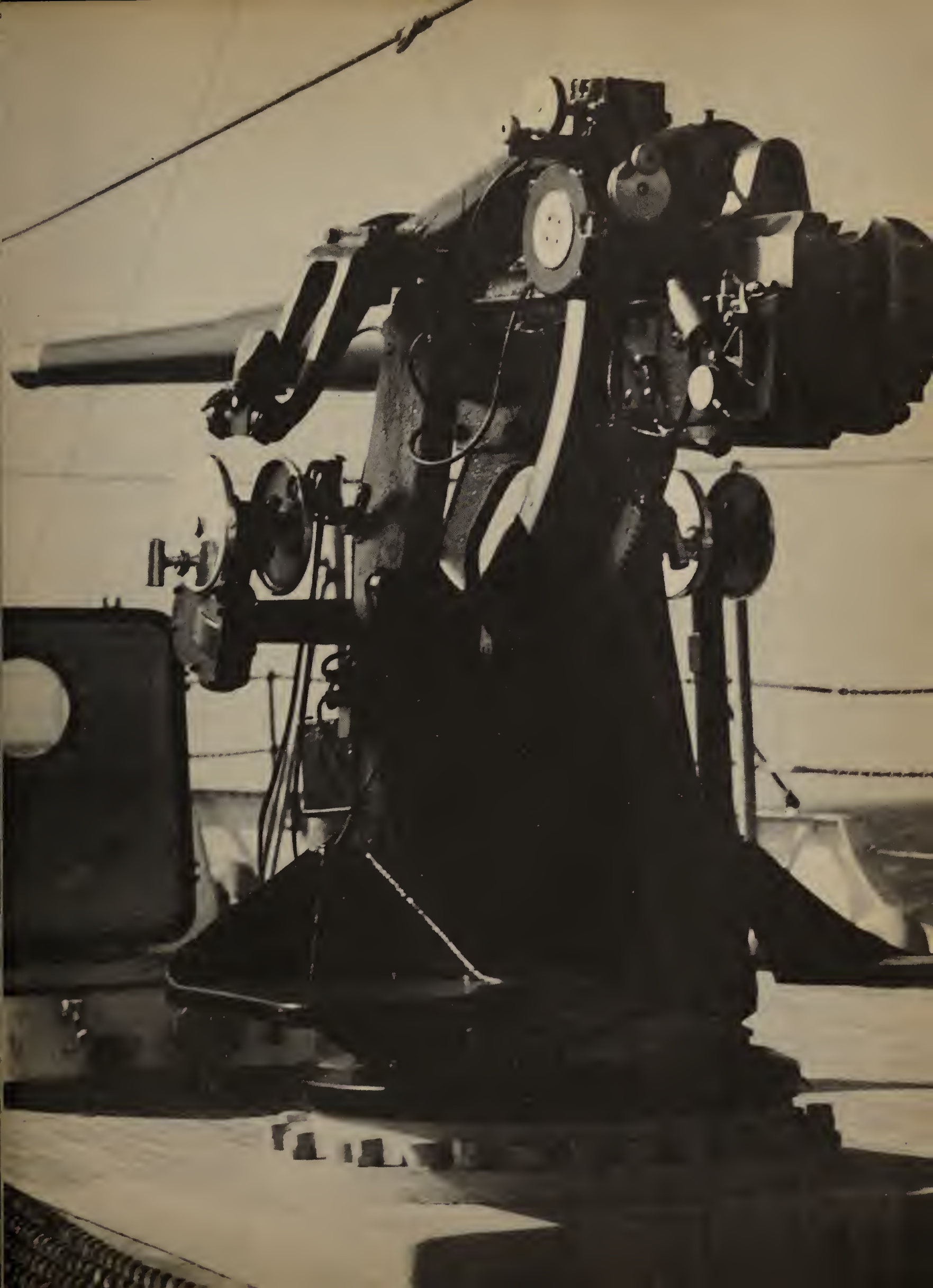


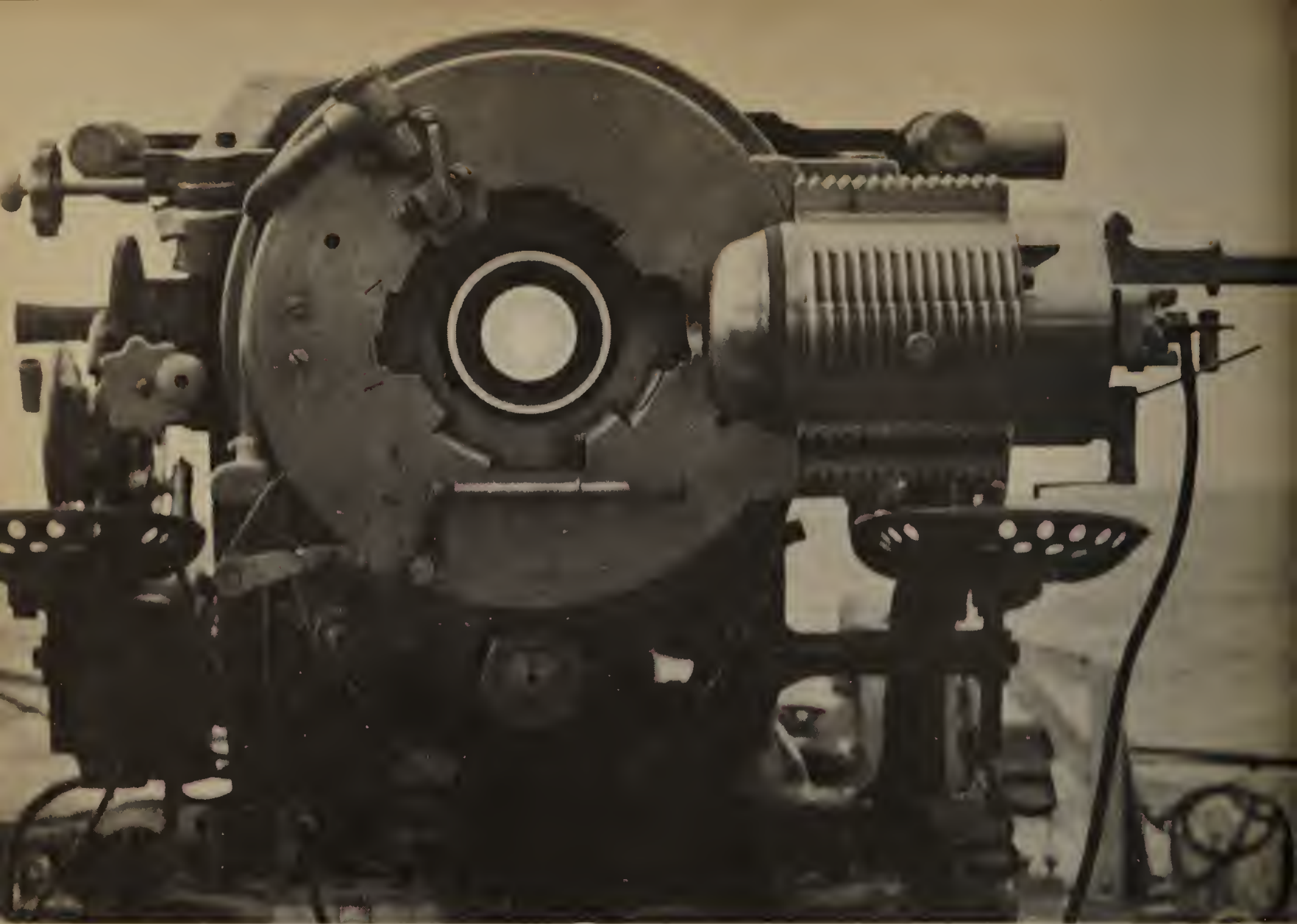
telescopes, intricate electrical apparatus, some delicate as a watch and some as cumbersome as a steam roller. On either side of the gun are steel, saddle-like seats. The pointers sit in these and swing the gun around in a vertical or a horizontal direction. It takes eight men to operate one of these guns, each man's duty demanding perfect performance to the fraction of a split second. These are the gun captain, the pointer, the trainer, the sight setter, and four shell men.

Farther aft we see the bitts, those huge metal castings to which towlines are attached. They must be as nearly as possible indestructible, for they are called upon to withstand great strain towing vessels in a heavy sea.

USING A RANGE FINDER

A THREE-INCH GUN





BREECH OF FIVE-INCH GUN

And here, cleverly lashed to the deck, is a long piece of metal like the huge lifter of a stove lid. This is the spare tiller, kept close to the rudder at the stern. If the steering mechanism should go wrong, this tiller can be put in place, ropes rigged up, and steering resumed.

Now, looking forward, we see tiers of boats hanging from their davits alongside, ready for instant lowering. Each boat is equipped with oars, sails, sea anchor, and water keg. There is little question about their condition. Unlike the lifeboats on a

liner, which may never be put to actual use, these boats are lowered sometimes many times a day as a matter of ship routine.

As we walk forward, on the starboard or right side of the ship, we see on our left the crew's kitchen, called the galley, with its shining stoves, pots, and pans. Beyond is the officers' or ward-room galley, not so large as the crews', but as white and spotless as an operating room in a hospital. In the pantries are kept the

SIGHTING A FIVE-INCH GUN





PHONES CONVEY ORDERS
TO GUN CREW



GUN CREW IN ACTION

china in bright steel racks, plates nesting in snug compartments, cups hanging by their handles, so that when the ship rolls, as ships do, there is little damage.

Far forward we see the cabin or captain's quarters, close to the bridge. It is a spacious room with settee, or transom, as a ship's sofa is called, and a mahogany table covered with green baize cloth. Here the captain and his guests, when he has them, dine. There is a desk also. The captain is a seaman, but he is also a busy business man. His ship is really a plant which may be



TARGETS BEING TOWED TO BASE AT SUNDOWN

valued at several million dollars, and the men of his crew, his workers, frequently number a hundred. Adjoining the cabin is the captain's stateroom, a comfortable, modest sleeping place. He usually sleeps in a berth as a matter of choice.

Let us take a look at the wardroom. This is where the officers

of a cutter spend their time when they are not on duty or sleeping. It is usually spacious and cheerful, taking the place of living room and dining room ashore. It runs from one side of the ship to the other—or, as sailors call it, athwart-ship. Large portholes

make it light and airy. At one end is a large dining table with its complement of comfortable chairs. At the other is a transom. Armchairs, soft and loungy, are in evidence. On the walls are pictures of ships and the sea. Radio and phonographs help while away the watch below and keep the officers in touch with things ashore. Here the men read, write, and study or play games.

Again, as we go forward, we see more guns. Here also are



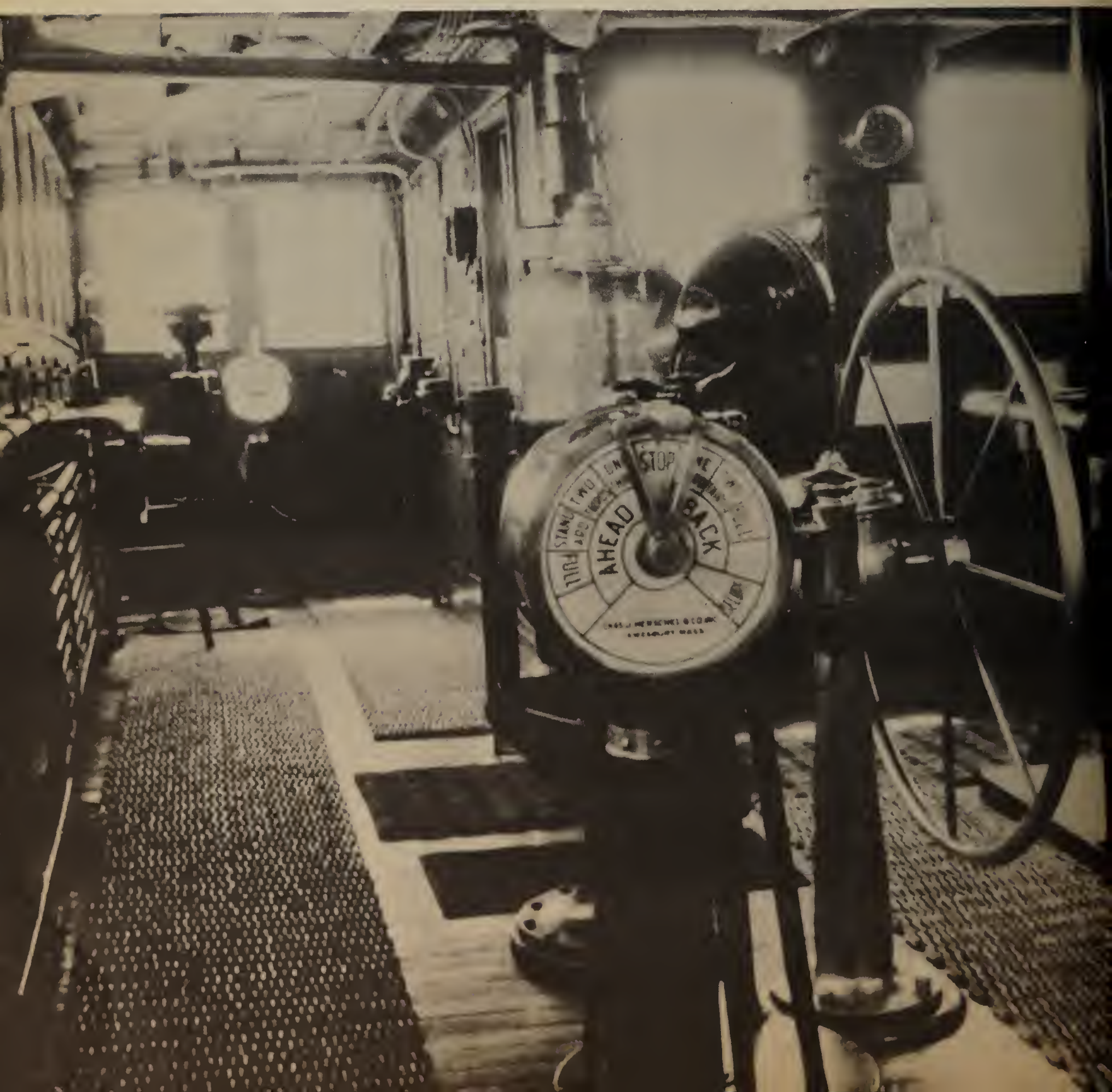
POWDER CANS ON DECK ABOVE



FIVE-INCH PROJECTILES READY FOR GUNS

the great steam winches, used primarily for hauling on anchor chains or hawsers.

Now, we turn and look aloft, at the bridge. This is the heart



THE SHIP'S BELL



VIEW OF INTERIOR OF BRIDGE

and brain of the ship. It occupies the highest part of the superstructure forward, and from it the vessel is managed and navigated. Its forward side has rows of plate-glass windows for complete visibility. Here the officer on watch keeps alert and wide awake every minute of his period of duty, which is the nautical four hours' watch.

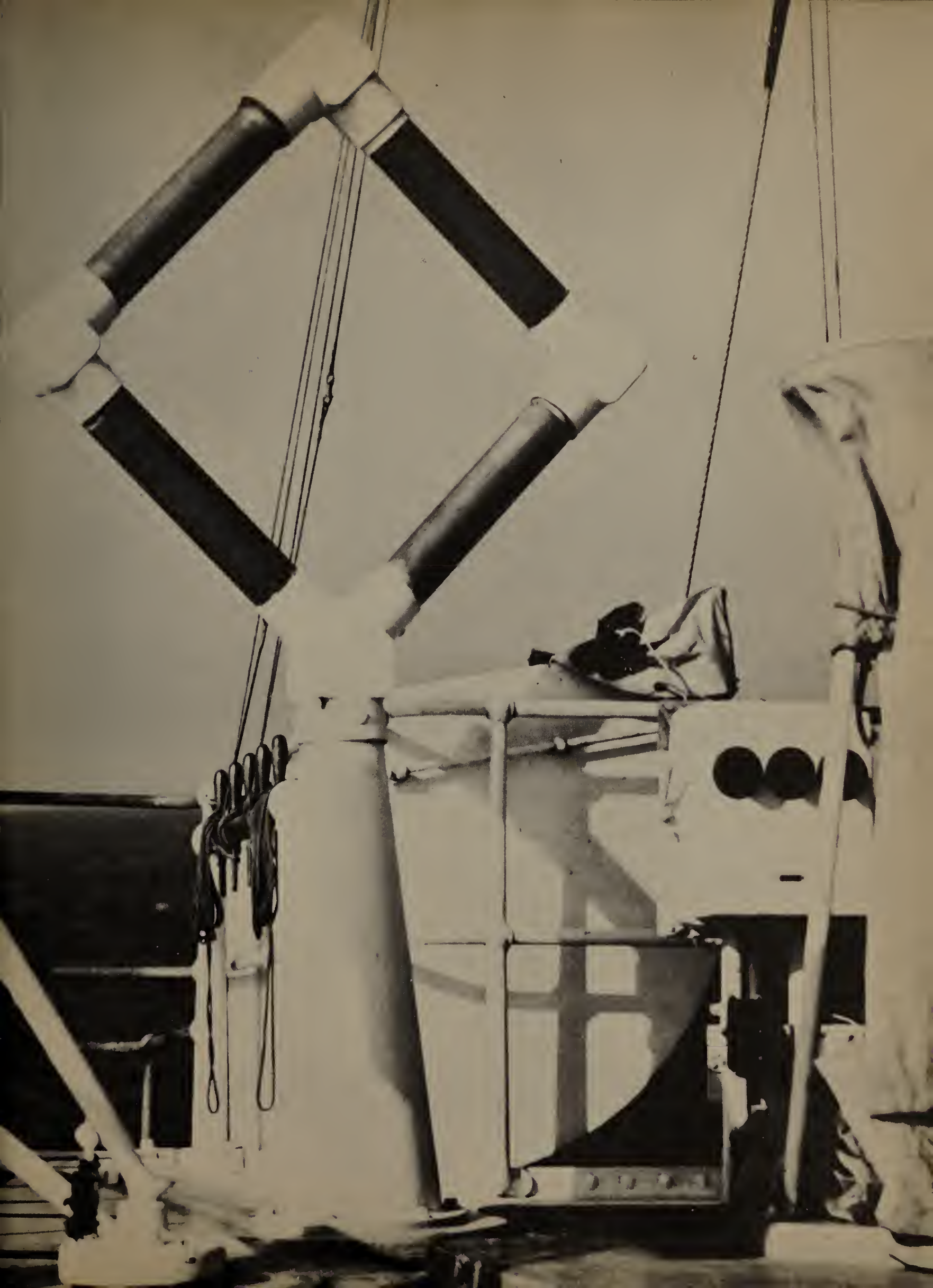
Let's step in and look around. In the center of the bridge we see the helmsman at the wheel. In front of him is the binnacle or compass. The needle of the magnetic compass should point always to the magnetic north, no matter how the ship swings. The face of the compass, or card, as it is called, is divided into 360 degrees. The four cardinal points are removed 90 degrees from each other. Thus, starting at North, which is 0, East would be 90, South 180, West 270. If the ship is to be steered East, the helmsman's course is given "Steer 90." Or if steered slightly

south of East "Steer 92." To each order given by the officer on the bridge the helmsman always replies by repeating the orders given him. It is vital that orders be carried out exactly as given.

On the right of the binnacle is the gyro compass. It gets its name from the gyroscope which operates it. A gyroscope, as you know, is a wheel which spins within a circular ring that supports the ends of the axis or shaft. When spinning at very high speed it does many strange things, one of which is to point its axis North and South. Scientists have taken advantage of this peculiarity and applied it to a compass which is not subject to the variations caused by magnetism as is the magnetic compass.

Now, spread out upon a table, we see a chart on which the course of the ship is marked in pencil. Every change of the ship's direction is recorded. Yonder on the bridge wings, which are merely extensions of the main bridge to starboard (right) or port (left) there is the peloris, used for taking bearings on a fixed object like a lighthouse or a buoy or permanent object on shore. It is really a compass in a bowl. On the opposite sides of the bowl are arranged two peepholes in line with the center. When the object is looked at through the two holes, the compass enables the observer to get its exact direction.

The radio direction finder is a special device for safe navi-



gation. It consists of a pivoted vertical coil. When the electromagnetic wave sent out by the radio station ashore strikes, or cuts, this coil at right angles, an electric current flows through the coil; but when the coil is parallel to the wave, no current flows through. This coil, which stands on the top of a metal shaft extending through and above the bridge, consists of a 4-foot frame in the form of a square thickly wound with thin wire. Two wires lead from the coil down through the shaft into radio earphones worn by the operator on the bridge. Attached to the shaft below is a wheel used to turn the coil, and farther below that, a dial-like compass—the direction pointer. When the ship desires to get its bearing, or position in longitude or latitude, it sends out a radio signal. As the answering signal comes in from a certain shore radio station, the operator slowly turns the coil above till the frame is edgewise to the wave. In this position he gets the loudest click, but he keeps turning till it weakens and he reaches the position of total absence of sound. At this point he notes the bearing of the



SIGNAL LOCKER

HOISTING SIGNAL FLAGS



ship on his dial. Then he picks up another station, miles away from the first, and notes its signal direction, and frequently a third shore station is picked up. Lines from all these stations are marked on the chart in the exact direction that the signal indicated. Where those three lines from the shore cross each other at sea is known as a fix, and shows the position of the ship.

Here on the bridge we find the engine-room telegraph, on whose dials are marked very plainly the messages to the men who stand at the throttles in the engine room below.

Now, let us go to the flying bridge immediately above and look at the powerful searchlights: the eyes of the ship in its night searches for the unfortunate of the sea. They are operated from the bridge below by switches and levers and can throw a powerful beam of light on an object five or more miles away.

Here also is the signal locker with its indexed flags all ready to

be run up to the signal yard. The flags differ in design and color, each representing a letter of the alphabet or a num-

READING A MESSAGE

SENDING A MESSAGE





ber. They do not spell out the message but send it out from a code book. In this book is contained almost every conceivable question pertaining to ships or activity or condition—as also every probable answer to those questions. In this way a long sentence may be expressed by three or four code letters on flags. Ships of all nationalities carry the same code book and speak to one another in that universal flag language of the sea.

When signaling is in progress a petty officer consults the code book, and a sailor bends, or ties, the flags to the halyard and runs them up to the signal yard. Another sailor with a powerful telescope or binoculars reads the signals on the other ship to a fourth man—a petty officer—who translates and sends them below to the bridge, usually through a speaking tube.

Now let us notice the huge ventilators which supply fresh air to the interior of the ship and draughts for the furnaces. These ventilators are trimmed—that is, turned into or away from the wind, as conditions below demand, and they are a most important feature of every ship.

And here, towering 125 feet aloft, is the great mast of the ship. Halfway up is a canvas-covered perch called the crow's nest, reached by an iron ladder running up the mast and entered by a hole through the bottom. From this point high above the deck,

STACK OF THE CUTTER "CHAMPLAIN"



the lookout on duty on a clear day can sweep the ocean through his binoculars in a twenty-mile circle, which means that in a run of 100 miles in clear weather 4,000 square miles of sea can be scanned and combed for trouble.

Nowhere does the radio fill such a need or function as completely as on the Coast Guard cutter. It is the ears and the tongue of the service. Day and night, men in the radio room keep listening—always listening for the call of distress or for orders to duty. Messages are ever coming in, sometimes as many as an hundred a day, from division headquarters, from the flagship of the area, from other ships in the service, and from many other sources. Every message is typed on a regular form and handed to the captain, who acknowledges it, or, if it be orders, passes them along for execution.

Smugglers' boats are usually spotted by Coast Guard stations or by patrol boats whose duty it is to scout for them and radio information on their movements, so let's follow a radio message from the moment the smuggler is discovered to the point where it starts final action.

A rakish craft with powerful engines slips out of a small remote harbor along the shore. She is recognized by the Coast Guard men at a near-by station as a smuggler. Her great speed

LOOKOUT GOING ALOFT TO CROW'S NEST





COAST GUARD CUTTER "THETIS" IN A HURRY

makes pursuit impossible for the station surfboats. But do they give her up? Do they drop the chase? Not at all. The station telephones the district office, giving a thorough description of the illegal craft. The district office in turn communicates by phone with the division commander's office. Here instructions

TYPICAL SMUGGLER

for pursuit and search are radioed to the cutter, which is at that moment cruising along the coast in that particular area. The commander of the cutter, after consulting the chart and such data as he has on this smuggler, immediately puts his ship into action. It is night—dark, with a falling glass, or barometer. The wind is freshening, and the sea is beginning to heave itself into one of its nasty moods. Word flies from bridge to engine room. Speed and more speed. All lights out!—for smugglers are cunning, and with their vessel dark they can dodge the Coast Guard if they see his lights.

A cool tenseness is everywhere on the ship. She is like a hound on the scent, a war horse sniffing battle.





"FOUR HOURS, MAYBE FIVE, OF ANXIOUS WAITING"



On the darkened bridge all is silent and serious. The captain himself comes on the bridge. His orders are given in a low, firm voice, repeated always by the one who receives them. Keen eyes peer out through the darkness—seas are beginning to batter the speeding cutter—torrents of water streaming down the bridge windows high above the deck frequently form a gray-green curtain, shutting out everything. It is eight bells, midnight, and the ship pitches with every sea.

Hour after hour, all night long, with the wind rising and the seas building up, the ship sloshes through. Now she slips in the trough of a wave, rises on the crest of the next wave, then, blam! slips down again. With every wave she hits, tons of water sweep the decks. Men in oilskins move like dark phantoms here and there

There are strange noises as her steel structure strains and pounds on the merciless waves. She seems to quiver with life at the excitement. Outside the wind is howling like a pack of hungry wolves. Screams and moans come from aloft as it tears its way through stay and shroud and halyard. And so the ship beats her way through a mad black sea. Again it is eight bells—four o'clock A.M., and near daybreak. By the computation of the bridge our ship should be in the vicinity of the smuggler. "Half Speed" is telegraphed to the engine room. A switch is thrown, a lever is turned, and a shaft of dazzling white light darts out into the blackness. The searchlight is in action. As the lever is turned it combs the sea like a finger trying to find a word on a printed page. It goes here and there, far and near, it hesitates—it stops! There about a mile away is a white commotion. "There she is!"

They've found their quarry.

READY TO LOWER AWAY



Swiftly, surely the cutter closes in on the smuggler. Search-lights continue to play over her, examining her from bow to stern. The officer on the bridge hails her, tells her to "Heave to!" which



means "Stop!" She obeys through fear of the cutter's guns. Meanwhile the guardsmen are putting on their life jackets, and a small boat is being lowered away over the side. The officer is already in his place, belted and pistoled. Each man rows with precision, reaches the strange ship, and climbs aboard. The officer examines papers, and his men make search. If contraband is found, the smuggler is convoyed back to port, where the cargo is held by the government and the crew detained.

So it is the Coast Guard ships are ever on the lookout for trouble. Always, when cruising up and down the seaboard, they may be roused at any moment to most strenuous activity.

Now comes another emergency. One of the crew has fallen overboard. Instantly the alarm horn, which, by the way, is like a large automobile horn, shrieks, "Quawk—quawk—quawk!"

The officer on the bridge pulls a lever which liberates from the ship's side the Franklin buoy. It is of thin copper and hol-



THE FRANKLIN BUOY—HORSESHOE TYPE

WATER LIGHTS THIS LIGHT





BOAT CREW IN ACTION

low, shaped rather like a circular life ring or a horseshoe. As it falls into the water, it lights up. On opposite sides of it are cylinders containing calcium carbide which, when in contact with water, flash up into brilliant flares. At night or in murky weather the unfortunate victim overboard can see the buoy and hold to it while the small lifeboat is being lowered and guided to the rescue. It is a matter not of minutes but of seconds before the lifeboat reaches the man clinging to the buoy. Meanwhile, on the bridge, the wheel is thrown hard over; that is, turned all the way to the right or left, so that the ship begins to describe a circle, bringing her back again to the buoy, the boat, and the rescued man.



When the dreaded signal of distress comes over the radio, the cutter thrills to the call of the supreme test. S O S—S O S—S O S shrieks through the earphones of the radio man. S O S—S O S—S O S. Again and again the pitiful call comes in. It gives the unfortunate ship's name and position. She is disabled! Propeller gone and leaking badly! Heavy seas are breaking over her! Hurry! Hurry!

It is then that the men on the cutter gird themselves for the fight. From captain to cabin boy, the battle cry is "Semper Paratus"—Always Ready!

Full speed ahead! Steer 130!

The distressed vessel is southeast, 60 miles away.

Four hours, maybe five, of anxious waiting. Fighting every foot of the way through wind and sea and tide. The cutter responds as if she were alive. Unmindful of the battering, she beats her way through the blackness and the chaos of wild water.

Below, the chief engineer stands by, his keen eye, his sensitive ear alert to every sound, to every flicker of a dial. The oil burners under the boilers shoot forth their great tongues of flame, whipping the water into steam that feeds the whirring turbines. Engineers, oilers, water tenders are carrying the brunt of the battle now. Naked to the waist they sweat and gasp. The heat is intense.



THESE DIALS TELL THE STORY OF THE CUTTER'S POWER PLANT

They are under forced draught. Giant fans force great quantities of air into the boiler room that the burners may have more and more oxygen. A gurgling whistle comes from the speaking tube. The bridge is crying for more speed! A few minutes may make a lot of difference later.

The men below, heroes every one, continue the fight, holding on to rail and stanchion, for all around them heavy machinery is running madly, never more than a few inches from their sweating, swaying bodies.

On the bridge keen eyes peer through the spray-curtained windows, bronzed faces look a shade lighter in the weak gleam of the binnacle lamp. On deck the bos'n's mate is making ready to lower away the boats as coolly as if he were preparing for a boat drill. It is all in a day's work.

And then the man on lookout reports a rocket dead ahead. The distress signal! The climax of the battle is at hand!

When the distressed vessel heaves in sight she is in a bad way. She is down by the head, which means she is leaking forward so that her bow is more deeply submerged than her stern. She has listed, or leaned to starboard. Her bridge is gone! Her boats, one by one, have been carried away, smashed by the overwhelming seas. Just as the surfboats maneuver along the coast so the cutter



approaches under her lee, where the water is not quite so turbulent. Number 1 boat is ready for lowering. The guardsmen climb into the boat, adjust their life jackets, and take their places at their appointed oars. The boat davits are swung outboard, and the right second for lowering is watched. Down she goes as the ropes shriek through the blocks. The instant she is water-borne, or on the water, oars are put out, and at a word she is away on her errand of mercy across several hundred feet of mad water. Up she goes on the top of a huge sea to slip down on the other side into the trough. The seas are breaking everywhere around



HEAVING THE LEAD



SHOOTING THE SUN



A DANGEROUS DERELICT—A MENACE TO NAVIGATION



her. She sidesteps like a boxer. She slows up, darts ahead. She goes to one side of a breaking sea, only to dodge another on the other side, but always she goes ahead, until she comes close to the disabled ship.

Meanwhile the victims of the sea, numb with cold and terror, hang on, fighting each wave that washes over them, that it may not take them with it. Somehow they manage to tie ropes around their waists and pass the loose ends down to the cutter's boat, which must keep away from the rolling ship lest it be smashed or swamped. One by one they leap into the sea, to be pulled out of it by the brawny guardsmen. Again and again the boat crosses the wild stretch of water, until the last man is taken off.

On the cutter, the poor frozen

creatures are thawed out and cared for. But the coast guard's job is not yet done. The disabled vessel must be salvaged or sunk, that she may not become a menace to navigation. So the captain heads the cutter up into the wind and sea and with engines turning slowly he stands by.

Morning comes.

Gradually the wind dies down and the sea becomes calmer. Again a boat leaves the cutter, this time on a tour of inspection. It looks as if the vessel can be saved, towed to the nearest port, 200 miles away. So great towing lines are rigged, lines almost

CREW CLIMBING IN BOAT FOR QUICK DRILL





as thick around as a man's leg, measuring 1,000 to 1,200 feet and costing as much as \$5,000. They are made fast to the towing bitts on the cutter and to the forward bitts, or perhaps to the windlass on the steamer, and the journey to port is begun. Old man sea has again been foiled!

Should the storm-battered ship be so damaged that she cannot be towed to port, she must be destroyed at once so that she may not become a derelict—a dead ship floating aimlessly over the ocean, carried here and there by tides and currents and winds.

Of all the dangers at sea the derelict is one of the most dreaded. It drifts almost entirely submerged, and so is difficult to see even in the daytime. At night, unlighted, it is even more dangerous, for an oncoming ship often may not sight it until too late to avoid it. Therefore the derelict must be destroyed, and her destruction is the cutter's job.

Again a boat is lowered, this time deliberately and without haste, for on the bottom of it repose one or two or perhaps three cylinders or metal cans, each of which carries a deadly charge of TNT, a most powerful explosive. The boat's crew row to the derelict and board it. Under the officer's direction the charges are placed so that they have a maximum of destructive effect; then they are electrically wired together and connected to one end of



a thousand-foot rubber-covered cable, which is wound on a reel in the boat. When all is in readiness the crew get in their boat and row away from the derelict, paying out the cable meanwhile. When they come to the end of the cable they attach it to an electric battery. After a careful survey of cable and wreck, as well as the surrounding water, a plunger is pressed on the battery, the spark flashes through the cable, and with a mountainous heave the ocean around the derelict bursts upward, carrying with it splinters, fragments and shreds of wood and steel and rope. The derelict, once a gallant ship, has gone to the bottom.



AN OPEN POWER BOAT IN ACTION



THE BO'S'N'S MATE AND HIS "PIPE"



INTO THE AIR WITH THE COAST GUARD

NOW A WORD about the most modern equipment of the Coast Guard Service: the flying lifeboats.

These are large seagoing planes, adapted for general coastal



THE FLYING LIFEBOAT

service on water or land, and especially suited for rescue work. In brief, they combine the best qualities of a transport plane and those of the sturdy surface lifeboat. These "ships," as they call



them, are marvels of modern science. They are aërial "eyes," capable of thousand-mile searches over the sea. They are aërial ambulances with the speed of a hundred miles an hour, able to land and take off in rough seas, and fitted not only with hatches large enough to admit stretchers bearing the sick and disabled, but with ample first-aid equipment. They have radio telegraph and radio telephones to keep in constant contact with the base and to send reports of shipwrecks or dangers to navigation to the surface craft on patrol. They are the special guardian angels of the small craft in distress. Some of them are capable of taking aboard

THE CUTTER "TAMPA"







fifteen or more passengers from burning or sinking vessels and standing by for lengthy periods on the surface of the sea, meanwhile calling by radio for cutter or patrol boat until a transfer of the rescued can be made. They can easily fly back to their base with seven or eight passengers.

Each of the five newest planes has a wingspread of more than 74 feet. Their hulls are of aluminum alloy and are 54 feet in length. As we go aboard we feel as though we are entering a destroyer or a submarine. The body proper is divided into three compartments, each equipped with a watertight bulkhead and door. Two motors of 420 horsepower each give the plane a flying speed of 112 miles an hour. Fully loaded, they have made altitude tests of 9,000 feet. Their cruising range without refueling is about 1,100 miles. This class of superseaplanes is named for the bright stars beloved by the navigator: *Antares*, *Altair*, *Arcturus*, and so on.

In cases of desperate illness or injury at sea, a doctor may board the plane and treat disease or dress wounds while in flight, and in an unbelievably short time the victim is resting in a city hospital.

In cases of fire or trouble of any kind aboard small craft, at sea, the flying lifeboat circles the scene once before gliding down



to a landing despite heavy swells. Within four minutes it is able to inflate and put over the life raft, ready to remove all passengers. Then, with a rush of its propellers and a churning of foam, it makes a quick take-off into the wind and heads for shore.

"Semper Paratus." Here we see the Coast Guard emblem in golden letters on each plane—and like the ships these planes are "always ready."



WEAVING A BELT DURING
HIS "WATCH BELOW"

THE SAILMAKER AT WORK .



Today, with the coming of the high-powered seaplane as a patrol auxiliary, the possibilities for still greater service extend beyond normal horizons. We may look with confidence toward a future where the sea and the wind, the reef and the darkness hold fewer terrors. For the Coast Guard Stands By!









